



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/812,550

03/29/2004

Rajat Aggarwal

X-1490 US

3439

24309

7590

07/03/2006

XILINX, INC

ATTN: LEGAL DEPARTMENT

2100 LOGIC DR

SAN JOSE, CA 95124

EXAMINER

DINH, PAUL

ART UNIT

PAPER NUMBER

2825

DATE MAILED: 07/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/812,550

Applicant(s)

AGGARWAL ET AL.

Examiner

Paul Dinh

Art Unit

2825

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>6/7/06</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This is a response to the amendment filed on 6/7/06.

The previous allowable subject matter has been withdrawn in view of further consideration and newly discovered prior art.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claims 1-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 8, 15 and their dependencies are rejected because:

- a. “modification to a PLD” is unclear and incomplete as to what is being modified; modify what. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).
- b. “modules of the PLD that has been changed” is unclear and incomplete as to changing what of the modules. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).
- c. The mere limitation “unchanged modules” being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01.
Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).
- d. “floorplanning only the changed modules thereby determining a placement solution that does not violate boundaries of unchanged modules” being incomplete for omitting essential steps, such omission amounting to a gap between the steps. How does

floorplanning only the changed modules that can result in a placement solution that does not violate boundaries of unchanged modules; what steps/implementations of the floorplanning/ placement solution that enable/result in the boundaries of unchanged modules not violated; see MPEP § 2172.01.

Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Claims 6-7, 13-14, and 20-21 are rejected because it is what being altered is not clear and “components of a module” is unclear as to what is meant by “components” (of a module). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-5, 8-12, 15-19 are rejected under 35 U.S.C. 102(b) as being anticipated by the prior art of record Shikata (USP 5309371)

(Claims 1, 8, 15)

Receiving a modification to a PLD that has been floor planned (one or more of: fig 1-2, 4-5 15, 27, for PLD see, i.e., col 1, 3, 10, 15);

Identifying modules of the PLD that have been changed by the modification (one or more of: Fig 2, 5, 15, 25, 27);

Floorplanning only the changed modules thereby determining a placement solution that does not violate boundaries of unchanged modules (one or more of: abstract, col 4 line 57+, col 5, 8 col 11 line 63+, col 13 line 48+, col 14, col 17 lines 53+, fig 2, 4-5, 15, 25, 27); and

Placing and routing the PLD (fig 1-2, 4-5).

Art Unit: 2825

(Claims 2, 9, 16) said floorplanning step further comprising selecting a shape from a set of Shapes for each changed module (fig 2, 4-5, 15, 25, 27), and assigning each changed module a non-overlapping location on the PLD according to the selected shape of each module (one or more of: abstract, col 4 line 57+, col 5, 8 col 11 line 63+, col 13 line 48+, col 14, col 17 lines 53+, fig 2, 4-5, 15, 25, 27).

(Claims 3, 10, 17) further comprising generating shapes for each changed module (fig 2, 4-5, 15, 25, 27).

(Claims 4, 11, 18) said floorplanning step further comprising adjusting a boundary of one of the changed modules to accommodate at least one component of the module without violating a boundary of an unchanged module (one or more of: abstract, col 4 line 57+, col 5, 8 col 11 line 63+, col 13 line 48+, col 14, col 17 lines 53+, fig 2, 4-5, 15, 25, 27).

(Claims 5, 12, 19) wherein the PLD device is a FPGA (see one or more of the followings: PLD is known as FPGA (Dante USP 6907592, col 1); PLD referred to as FPGA (Hutton, USP 7010777); PLD: generic term for any programmable device such as FPGA (Mason, US pub. 2001/0047509); conventional PLD is FPGA (Schadt USP 6870395, abstract))

2. Claims 1-5, 8-12, 15-19 are rejected under 35 U.S.C. 102(b) as being anticipated by the prior art of record Chaudhary (USP 6086631)

(Claims 1, 8, 15)

Receiving a modification to a PLD that has been floor planned (one or more of: fig 2-7, 9-10, 15, 18, 20, 23, 25);

Identifying modules of the PLD that have been changed by the modification (one or more of: Fig 9-11, 13);

Floorplanning only the changed modules thereby determining a placement solution that does not violate boundaries of unchanged modules (one or more of: fig 9-10, 13, 24, 26, 35); and

Placing and routing the PLD (fig 2, 7).

(Claims 2, 9, 16) said floorplanning step further comprising selecting a shape from a set of Shapes for each changed module (fig 24, 26, 35), and assigning each changed module a non-overlapping location on the PLD according to the selected shape of each module (fig 24, 26, 35).

Art Unit: 2825

(Claims 3, 10, 17) further comprising generating shapes for each changed module (fig 24, 26, 35).

(Claims 4, 11, 18) said floorplanning step further comprising adjusting a boundary of one of the changed modules to accommodate at least one component of the module without violating a boundary of an unchanged module (one or more of: fig 9-10, 13, 24, 26, 35).

(Claims 5, 12, 19) wherein the PLD device is a FPGA (fig 2, 6-7)

Allowable Subject Matter

Claims 6-7 and similarly recited claims 13-14, 21-22 would be allowable if rewritten to overcome all the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Dinh whose telephone number is 571-272-1890. If attempts to reach the examiner by telephone are unsuccessful, the examiner's Supervisor, Jack Chiang can be reached on 571-272-7483. The fax number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



PAUL DINH
PRIMARY EXAMINER